MULTIMEDIA UNIVERSITY®

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2019/2020

MVR1023 – SIMULATION MODELLING 1

(All sections / Groups)

10 MARCH 2020
2:30p.m – 4:30p.m
(2 Hours)

INSTRUCTIONS TO THE STUDENTS

1. This Question paper consists of 5 pages, including cover page with 10 questions in Section A and 4 questions in Section B. Total marks is 40.

2. Answer **ALL 10 questions in Section A**. Each question carries 1 mark.

3. Answer ONLY **3 out of 4 questions in Section B,** and the distribution of the marks is as stated.

4. Please write all your answers in the answer booklet provided

SECTION A | Answer ALL
Total marks are 10

1. Game artists or VR content developers would create the low-polygon model for their assets. What does it mean for "the low-polygon model"?

   A. A 3D model with low-resolution texture.
   B. A 3D model with a small number of polygons
   C. A 3D model with the LOD system
   D. None of the above.

2. A normal map is used to create surface relief on a 3D object which will react to_____?

   A. bumpiness
   B. smoothness
   C. lighting
   D. shadow

3. The scale of 1:20 in scale drawing is referred to
   A. 1 mm on the drawing is equal to 1 m on the actual object
   B. 1 cm on the drawing is equal to 20 cm on the actual object
   C. 1 m on the actual object is equal to 20mm on the drawing
   D. 1 m on the drawing is equal to 20cm on the actual object

4. Which of the following is not a type of normal map that you have learnt in class?
   A. World space.
   B. Tangent
   C. Object space
   D. Normal space.

5. Modern games implement normal maps, as it uses as "per-pixel lighting engine" What does it mean.?
   A. Normal maps depend on the game engine.
   B. Normal maps are used to describe the normal direction of each pixel of an object.
   C. Object pixels are changed to normal.
   D. Normal maps use lighting to change pixels colour.

Continued...

6. Listed below are the type of static level of detail (LOD) management EXCEPT…

   A. Discrete geometry
   B. Alpha blending
   C. Mapping LOD
   D. Morphing

7. Discrete LOD management refers to…..?
   A. LOD management based on the game engine.
   B. Object models are loaded based on the distance from the camera.
   C. The object will reduce its polygons when it comes near to the camera.
   D. LOD will use a crossfaded effect based on camera distance.

8. Listed below are the few procedures for cleaning up your 3D model geometry EXCEPTS?
   A. Remove unwanted edge.
   B. Weld all the vertices.
   C. Remove small polygons.
   D. Remove overlapping faces.

9. You can achieve the details of the bevelled edge of a 3D object without adding extra polygon by…
   A. using the chamfer edge technique.
   B. using the UVW mapping technique.
   C. using the edit edge of the object.
   D. using the normal and specular mapping technique

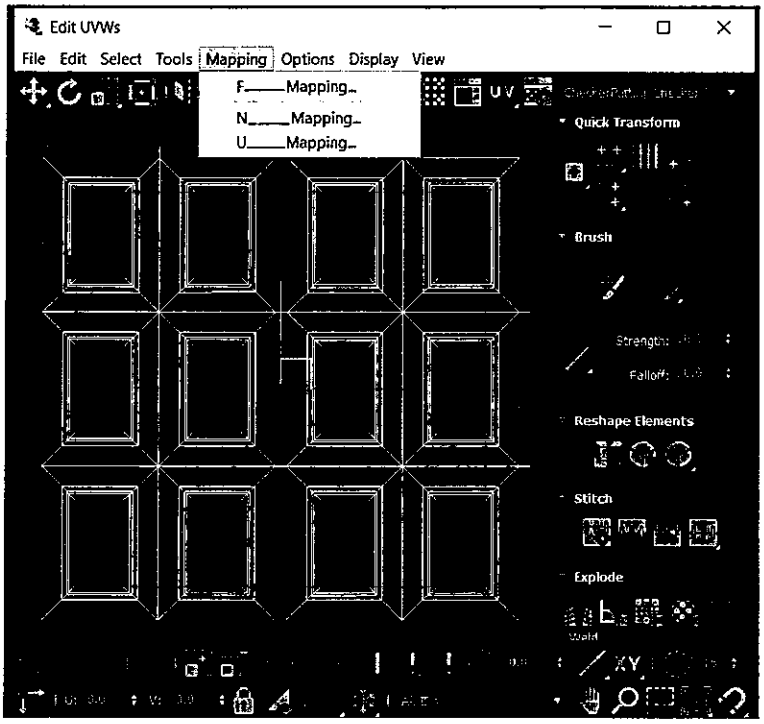
10. The features of a door are normally recessed slightly. How would you model the door with the consideration of polygon count?
    A. It could be textured in place just as effectively.
    B. It needs to model every single detail of it.
    C. It should be a model with a smooth polygon.
    D. Model the door in front of the wall.

Continued..

SECTION B

Answer only THREE (3) questions out of four. Each question carries TEN (10) marks.

Question 1



a. There are a few options to apply mapping to your object. Name the modifier where you will be able to edit UVWs as the image above. [1 mark]

b. Name three mappings available to unwrap your surfaces. [3 marks]

c. Explain the process to create the different direction of the wood grain on the surface of a wooden panel door from 3D studio max to Photoshop from this UVW mapping. [6 marks]

Question 2

a. Give the definition of the normal maps? [2 marks]

b. Explain step by step process on how do you create the normal map projection from high poly object to the low poly object in 3D Studio Max? [8 marks]

Continued...

Question 3

a. When you create textures for VR or game assets, what are three (3) elements to consider for details? [3 marks]

b. Based on question 3(a), explain the three (3) elements and how they help in enhancing the visual re-presentation and give characteristic to the game asset? Support each answer with examples. [7 marks]

Question 4

a. List four (4) out of 12 Principle of Animation by Frank Thomas & Ollie Johnston [4 marks]

b. Based on question 4(a), explain the meaning of the three (3) principles from the 12 principles of Animation above. [6 marks]

End of Paper